

Jeff Seadon



Jeff has worked in waste minimisation and resource efficiency for over two decades. Beside government, research and academic sectors his work includes consulting to business (from micro to global), and government from local and national, to the United Nations. In his role as the Waste Policy Manager at the Ministry for the Environment, Jeff led development and adoption of the Waste Minimisation Act (2008).

Currently Jeff is the Programme Director for Postgraduate Programmes in the Built Environment Engineering Department at Auckland University of Technology

Executive Summary

Covid-19 has resulted in many people working from home as countries went into lockdown. This resulted in a significant upsurge in the purchase and usage of electrical and electronic equipment (EEE). EEE relies on rare earth metals like lanthanum, cerium, praseodymium, neodymium, gadolinium and dysprosium; precious metals such as gold, silver and palladium; or other metals such as copper, aluminium or iron, which have a high intrinsic value. However, even though 'critical materials' are scarce, they have recycling rates lower than 1%, which represents a threat to resource security over the long term.

During their life cycles EEE contributes to global warming, ozone layer depletion, depletion of the earth's resources, human toxicity, acid rain production, and waterway eutrophication. Currently, most EEE end up in landfills where concentration of precious metals and rare earths are becoming significantly higher than in mines.

A significant portion of the life cycle impact of EEE is incurred in extracting metals and if they become part of a circular economy, the savings can be significant. For example, recycling lithium-ion batteries saves 51 per cent of natural resources compared to using virgin material.

Gaps and Opportunities

- Diversion of e-waste considerably lowers its impact on the environment, including human health.
- Composition of e-waste (e.g. precious metals) creates opportunities for economic gain, if adequately diverted from landfill.
- Most Asian countries have limited internal programmes to divert e-waste from landfills.
- There is no responsibility for companies or countries that export EEE to the Pacific or Asia to ensure there are end-of-life processes to make certain that e-waste is diverted from landfills.
- Development of guidelines and policies for adequate diversion of e-waste can benefit those regions, particularly if an integrated approach is applied that includes both exporters and importers, accompanied with regional pilot programmes for implementation.